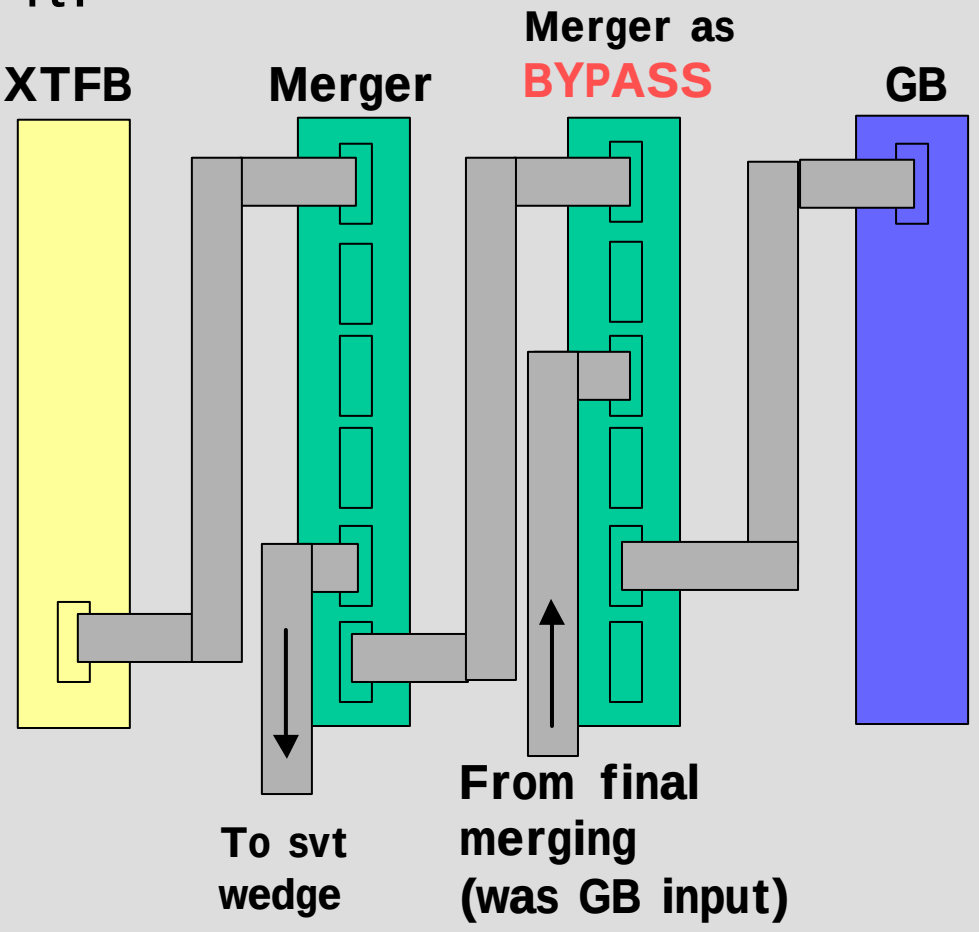
Suppress hits for KillOnBit18=0 ?

I recall the idea:
if bit 18 =0: SVT sends out the EE word right away and afterwards process the hits received and discards them.

- Probably a better way to proceed would have been to study the problem and better understand timing and real gain (I've done some little work in this direction which has been shown in a previous meeting).
- Reality is that this will not be done shortly. I believe this feature is interesting and we have to study or test it.
- So I decided to modify a Merger in a way that allow us to test it soon (actually the new firmware does not what proposed originally by Jonathan).

SVT BYPASS

I have implemented in a Merger the SVT BYPASS (in my previous talk it was illustated as the GB option).
How to use it:



Status:
New firmware loaded in a Merger.

I still have to test it. Should take few hours.

My opinion

- I still think this is not the right way to implement the suppression of hits when bit18=0:
  - ✓ we send to level 2 the message that SVT is done while we are still processing data
  - ✓ a modification in the original SVT architecture is introduced which leads to the possibility of Lost Sync
    - ❑ Ok, may be this we'll turn out not to be a real problem: still it is there.
- I believe we should anyway implement the check of the fifo overflows to send a CDF_ERROR to trigger an HRR.

Conclusions

- Let go ahead and test it!
- My proposal:
  - ✓ Let's not take for granted that this is the way we should implement in SVT
  - ✓Let's resume the discussion when we have understood more

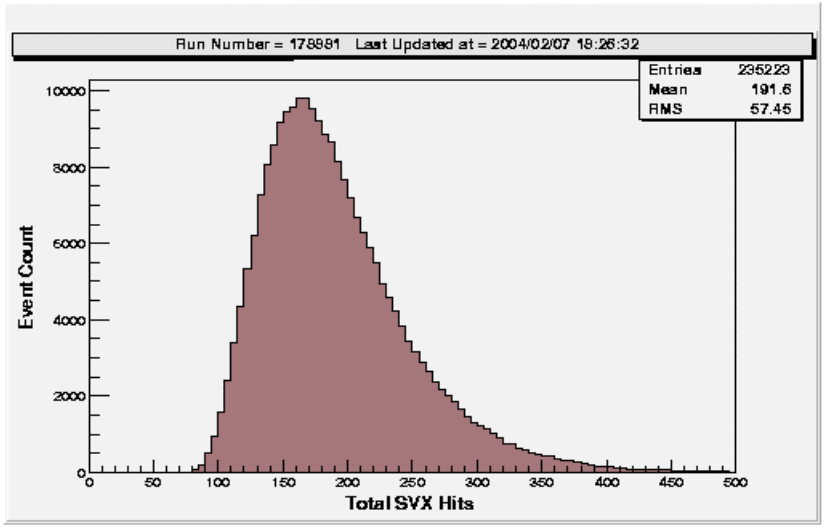
MY FEAR:

Tomorrow: there will be higher luminosity and SVT has less manpower. If the problem comes up will be in troubles -> Better spend some extra time today ….

BACKUP SLIDES

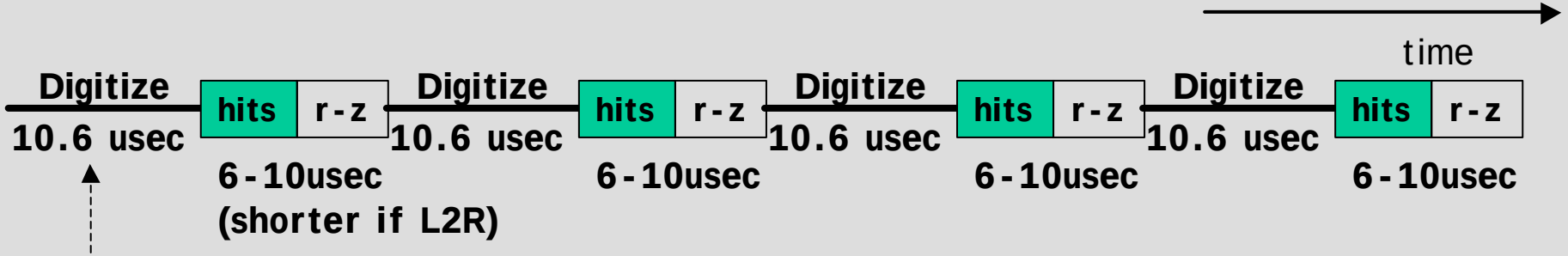
Some questions

- What is the situation for the upgrade of the SRC?
  - ✓ will it be done?
  - ✓ will it suppress hit sending on the basis of trigger bits?
- can Chicago have a look on how difficult it is to discard the input data to the HF?
- can the upgrade of SVT underway change the way we could implement the hit suppression?



	200 hits T(usec)	500 hits T(usec)
Merger 33MHz	6	15
HB 23MHz (44ns)	8.8	22

I expect SVX data to arrive at SVT with this pattern (4 L1A in a raw):



SVT could send the EE to L2 +

Minimum L2 processing time: 5-10usec

(from S.Miller)

In principle this pattern can go on with no extra delays

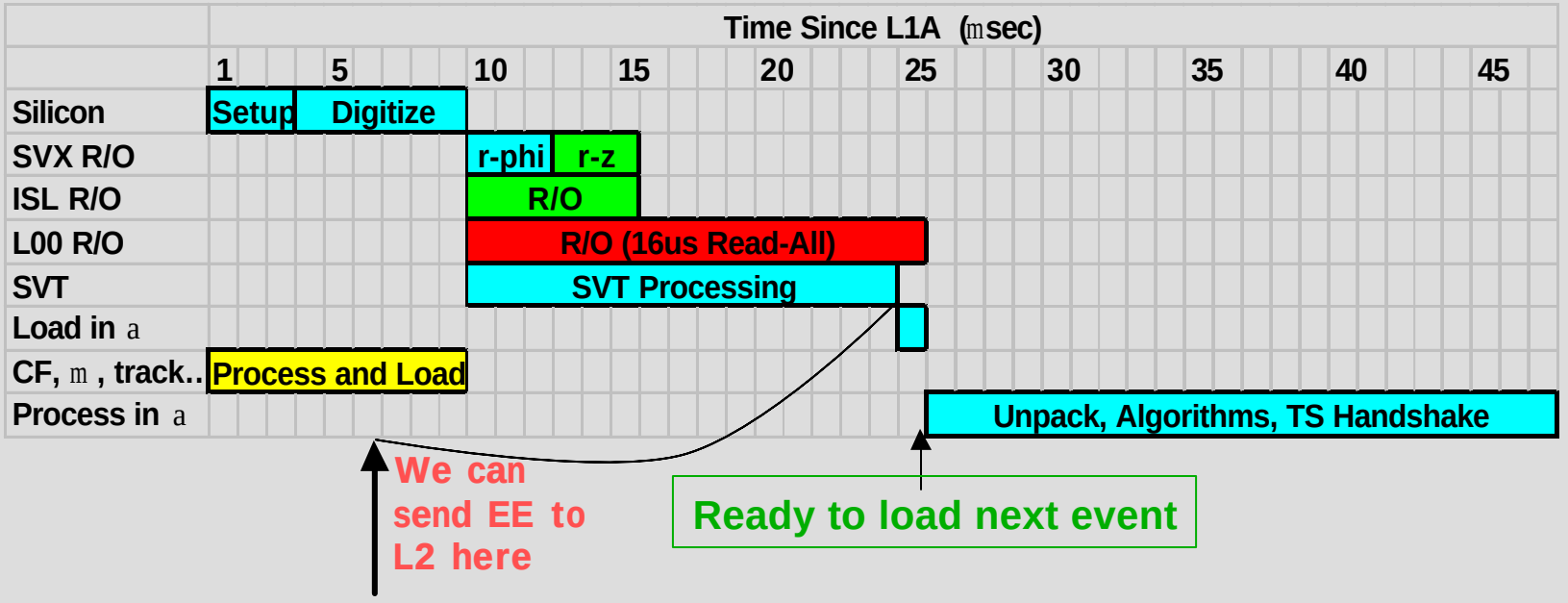
Is SVT able to keep the rate?
Do we feel safe?

General question:

Is it worth?

SVT timing decreased by ~1usec with KillOnBit18.

But from the general point of view, it seems an interesting feature to implement:

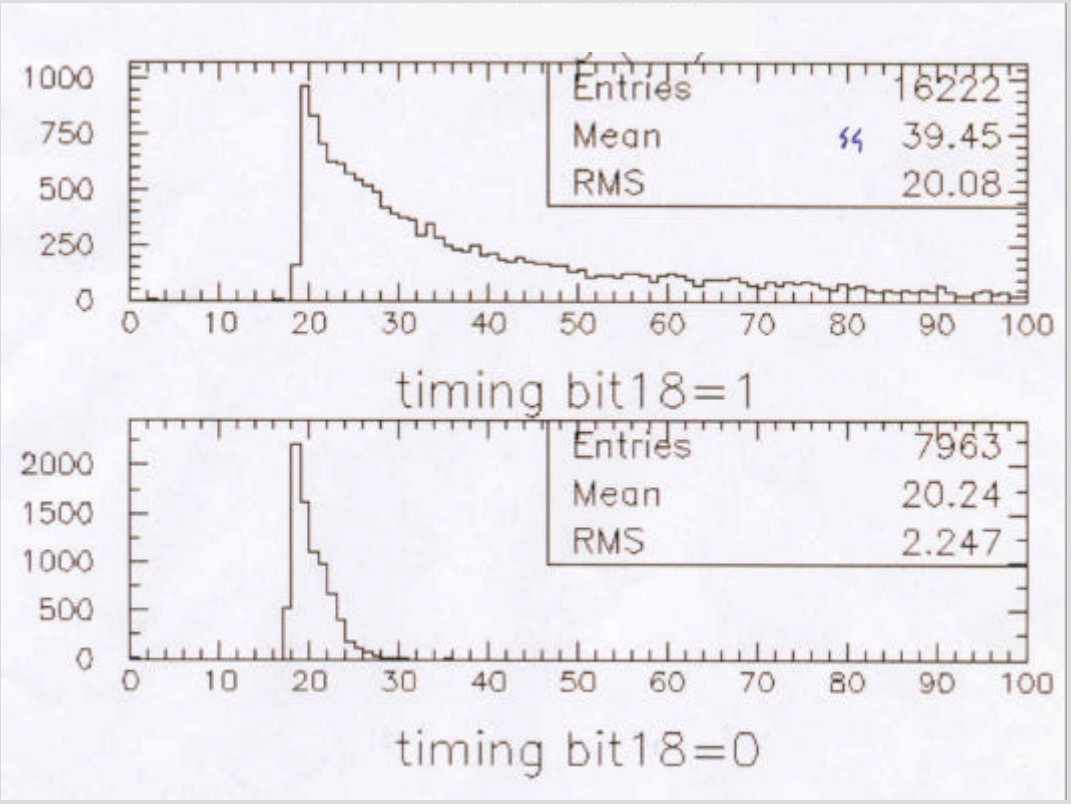


~1 year ago diagram

It seems we gain a lot.

At this point I do not fully understand why we don't gain more with implementing KillOnBit18:

- may be will see the effect at high luminosity and with different composition of the trigger



Gain:
1usec